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PENNSYLVANIA AT WAR

1941-1945



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION
HARRISBURG, 1946

THE PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

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FOREWORD

Pennsylvania's role in all of the wars in which the Nation has been involved during its history has been distinctive. Some of the most notable campaigns of the Revolution and the Civil War were fought on our soil. We have as permanent monuments to those wars Valley Forge and Gettysburg.

The number of Pennsylvanians with distinguished careers in the Army and Navy of the United States through the years has been unusually large. It includes Anthony Wayne, Arthur St. Clair, Armstrong, Mifflin, and Brodhead of Revolutionary War fame, and General Jacob Brown and Commodore Stephen Decatur of the War of 1812. During the Civil War, Pennsylvania gave to the Union cause generals of the caliber of Meade, Hancock, McClellan, and Reynolds, together with Admiral David Porter. General Peyton March began his military career during the Spanish American War and was a principal leader of the American forces in World War I. General Tasker H. Bliss of Lewisburg was appointed chief-of-staff in 1917 and a member of the Allied Supreme War Council. Admiral William Sims was a Pennsylvania appointed to the Naval Academy and in charge of naval operations in World War I.

In addition to furnishing the Nation with military and naval leaders, Pennsylvania has always been an important aid in financial and other material support to freedom's cause in wartime. Robert Morris and Haym Solomon were financiers of the Revolution, while Stephen Girard, Albert Gallatin, and Alexander Dallas managed the finances of the War of 1812. Jay Cooke of Philadelphia was the financier of the Civil War.

The iron furnaces and forges of Pennsylvania were a major source of supply for the Continental armies of Washington. Carlisle was an important munitions and supply depot in the Revolution. Camp Curtin at Harrisburg was the largest military concentration center in the North during the Civil War. Pennsylvania shipyards have turned out shipping for all the wars, and built a large percentage of the armed vessels for the American Navy. Pennsylvania iron and steel were the foundation of the sinews of war in every conflict since the Revolution. Clothing for Washington's army was manufactured in Philadelphia, and the Boys in Blue were uniformed and supplied in no small measure from Pennsylvania mills and factories.

In manpower, Pennsylvania always has given to the Nation liberally in its hours of crisis. Over 35,000 Pennsylvanians served in the Revolution, about ten per cent of the total. Some 14,000 Pennsylvanians served during the War of 1812. There were 387,284 men from the Keystone State serving in the

Union armies during the Civil War, over ten per cent of the total. In World War I, the number of Pennsylvanians in the service was close to 400,000 and again this was nearly ten per cent of the national enlistments.

It is clear, therefore, that whenever our liberty has been at stake, Pennsylvania has been in the forefront in its defense. This was no less true during the recent war than previously. The overall picture of Pennsylvania's magnificent contribution to the winning of the great war for freedom presented in *Pennsylvania at War* should be an inspiration to all of us, both today and for all time. It should remind us that we owe much to the men and women who served in the various branches of the armed services, and are our veterans of today. To them we pay tribute and extend our gratitude. To Pennsylvania's farmers, its laborers in the mine and factory, and to its industrialists, manufacturers, and businessmen, we likewise extend appreciation for their contribution to production on the home front. To the thousands who served in the numerous wartime defense, rationing, and other essential home services, we say that their work was no less important to winning the war.

Pennsylvania at War is a tribute to a great Commonwealth and its power to uphold the fundamental principles of our democracy. As chairman of the Pennsylvania Historical and Museum Commission, it is a privilege to present to the people of the State so inspiring a record of our recent achievement.

JAMES H. DUFF, Chairman

Pennsylvania Historical and Museum
Commission

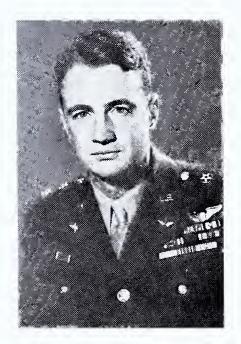


CHIEF BOATSWAIN EDWIN J. HILL PHILADELPHIA
Killed at Pearl Harbor while attempting to get his ship into action.



LT. MITCHELL PAIGE

DRAVOSBURG
Stopped a Japanese attack singlehanded on Guadalcanal, October, 1942.



MAJOR JAY ZEAMER, JR.

CARLISLE
Severely wounded on a volunteer reconnaissance flight over Bougainville on June 16, 1943.



LT. JOSEPH R. SARNOSKI SIMPSON Killed on the flight with Zeamer, shooting down a Jap plane after receiving a fatal wound.



PVT. JAMES WILLIAM REESE CHESTER
Killed in Sicily while making a single-handed attack on a German machine-gun nest, August 5, 1943.



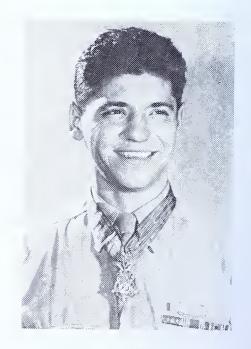
MAJOR RALPH CHELI

BETHLEHEM

Completed a mission against a Jap
base in New Guinea with his plane
afire and crashed in the sea.



CPL. CHARLES E. KELLY
PITTSBURGH
Knocked out machine-gun nests and killed 40 snipers near Salerno.



PFC. ALTON W. KNAPPENBERGER
SPRING MOUNT
Held back two companies of Germans
single-handed on Anzio beachhead.



S/SGT. ARCHIBALD MATHIES
FINLEYVILLE
Killed trying to land a crippled plane
in attempt to save the life of the
wounded co-pilot.



PFC. JOHN W. DUTKO
HOMER CITY
Killed on Anzio beachhead while wiping out three German machine-gun
nests, May 23, 1944.



LT. ROBERT T. WAUGH
PHOENIXVILLE
Killed five days after he had neutralized six bunkers and two pillboxes in the Gustav Line in Italy.



T/5 JOHN J. PINDER

BURGETTSTOWN

Although gravely wounded on D-Day, he continued to land radio equipment until he was finally killed.



T/SGT. JOHN D. KELLY

CAMBRIDGE SPRINGS

Wiped out a German strong point with TNT near Cherbourg; killed five months later.



CAPT. ROBERT E. ROEDER
SUMMIT STATION
Killed in Italy after repulsing seven counterattacks on his position on Mount Battaglia.



S/SGT. SHERWOOD H. HALLMAN SPRING CITY Killed the day after making a singlehanded attack on a German position near Brest.



LT. JOHN J. TOMINAC

CONEMAUGH

Leaped on an abandoned tank and used its machine gun on the Germans in Southern France.



MAJOR WILLIAM A. SHOMO JEANNETTE Shot down seven Jap planes in a single combat over the Philippines.



MARINE CPL. ANTHONY P. DAMATO SHENANDOAH
Smothered a Jap grenade with his body to save the lives of his comrades.



SGT. JOHN J. McVEIGH
PHILADELPHIA
Killed near Brest while charging the advancing Germans with a trench-knife as his only weapon.



PVT. DONALD R. LOBAUGH
FREEPORT
Cleared an escape route for his surrounded comrades at the cost of his own life on New Guinea.



S/SGT. ALVIN CAREY
LAUGHLINTOWN
Mortally wounded while destroying a
German pillbox in Brittany with a
single-handed attack.



PFC. GINO J. MERL1
PECKVILLE
Feigned death to escape capture by
the Nazis and resumed firing his machine gun after the enemy had left.



CPL. ALFRED LEONARD WILSON
FAIRCHANGE
Bled to death in France while caring for other wounded men.



SGT. DAY G. TURNER NESCOPECK R. D. Killed a month after driving back repéated German attacks.



SGT. ELLIS R. WEICHT

EVERETT

Killed in Alsace while wiping out

German machine-gun nests.



1ST SGT, LEONARD A. FUNK, JR. WILKINSBURG
Killed a German officer who was covering him with an automatic.



PFC. GEORGE BENJAMIN, JR.

PHILADELPHIA

Killed on Leyte after voluntarily leaving his safe position to encourage his platoon.



S/SGT. ROBERT E. LAWS

ALTOON
Silenced a Jap pillbox and attacked the enemy riflemen killing one with his bare hands.



PVT. FOSTER J. SAYERS
HOWARD
Killed while making a single-handed charge with a machine gun on a German position.



LT. EDWARD A. SILK
JOHNSTOWN
Charged alone across 200 yards of open field to capture a house held by the Germans.



T/SGT. FREEMAN V. HORNER
SHAMOKIN
Wiped out three hostile machine guns
with grenades in Germany.



LT. WALTER J. WILL
PITTSBURGH
Killed after silencing four German
machine-gun positions.



PFC. FRANCIS X. McGRAW
PHILADELPHIA
Killed while holding his position
against a fierce German counterattack.



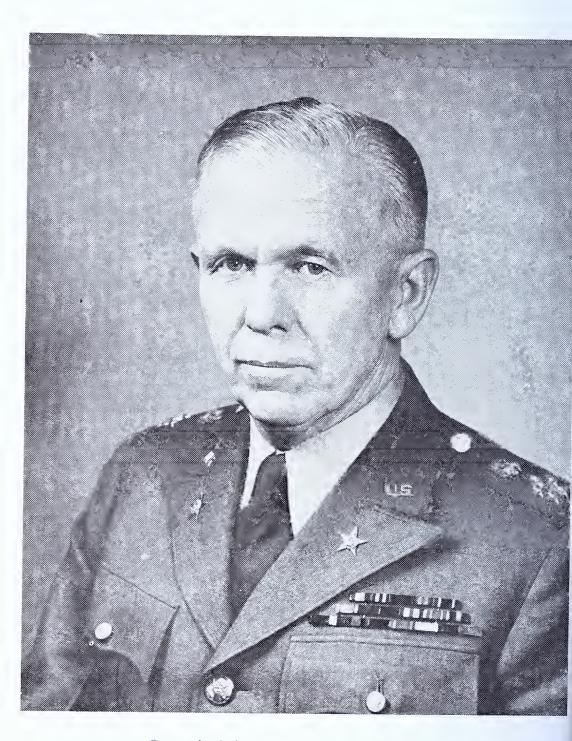
CPL. HARRY R. HARR
EAST FREEDOM
Saved the lives of four comrades by smothering a grenade with his body.



SGT. HAROLD O. MESSERSCHMIDT

BARNESVILLE

Killed after charging the Germans
with an empty machine gun.



General of the Army George C. Marshall.

MEN IN UNIFORM

In World War II nearly a million and a quarter Pennsylvanians left farm and factory, school and shop, to wear their country's uniform. On June 30, 1945, when the armed forces were at their peak, the Army counted 667,000 men and 12,913 women from Pennsylvania, the equivalent of four pre-war armies. The Navy had 249,926 men and 7,444 women from the State, more than twice as many sailors as manned the fleet in the 1930's. In the Marine Corps were 39,466 men and 1,530 women from Pennsylvania, while the Coast Guard had 11,669 men and 843 SPARS. This total of almost a million—990,791—did not include 179,336 persons who had already been separated from the Army by death, retirement, or discharge. Adding estimates for Navy separations and inductions subsequent to June 30, 1945, it was safe to say that one Pennsylvanian out of every eight had served in the armed forces during the war.

Pennsylvania could well be proud of this contribution of manpower to the fighting forces, exceeded in quantity only by New York. In quality Pennsylsylvania stood second to none. Its native sons earned 32 Congressional Medals of Honor, the nation's highest award for bravery; New York followed with 30, while Texas was third with 26. Three other residents of Pennsylvania received Medals of Honor, making the State's grand total 35. Lesser decorations had come by the hundreds and by the thousands until there was no longer any counting of them.

"Pennsylvania's greatest contribution to the winning of the war," in the words of Governor Martin, was General of the Army George Catlett Marshall, by universal acclaim America's No. 1 soldier. The son of a coal operator, George Marshall grew up in Uniontown, where he was born on the last day of 1880. At sixteen he went to Virginia Military Institute, becoming First Captain of the Corps of Cadets and All-Southern football tackle, honors of which he is as proud as the many others that have since come to him. Within a year of his graduation he began his brilliant military career with a second lieutenant's commission.

From the first George Marshall was outstanding. In 1907 he was senior honor graduate of the Infantry-Cavalry School. In the Philippines his commanding officer rated him as "the greatest military genius of America since Stonewall Jackson." In World War I he was credited with the outstanding large-scale troop movement of the war. Pershing considered him the A. E. F.'s best staff officer. On the day that Hitler's hordes swarmed into Poland, President Roosevelt jumped him over thirty senior officers to Chief of Staff.

Fighting against time, General Marshall strove to rebuild the nation's defenses. When the war came too



General Carl Spaatz of Boyertown takes over the Air Force from General of the Army H. H. Arnold of Gladwyne.

soon, he mapped our defensive strategy of holding off the Japanese with one hand and punching at Hitler with the other. In spite of clamor from inside and outside our country, he held back the offensive until we were ready. He insisted on unity of command of the Allied forces. He ignored the tradition of seniority in promotions. He broke down old prejudices against new equipment and gave the Air Forces the autonomy, they needed for expansion.

When the once invincible forces of the Japs and Nazis had crumbled under the lightning blows of the best-equipped, best-trained, best-led Army America had ever had, the nation

could say with President Truman: "To him as much as to any individual, the United States owes its future. He takes his place at the head of the great commanders of history." As General Marshall laid aside his task of making war and flew off to China to make peace there, his fellow-citizens watched him go with reluctant eyes, well-knowing that it would be long before his like would come again.

The Army Air Force was also a tribute to a Pennsylvanian, General of the Army Henry Harley Arnold, who was born in Gladwyne on June 25, 1886, the son of a Montgomery County doctor. Entering West Point

at seventeen, he became one of the first four military aviators in 1911 and set a series of records as a flyer. As soon as he was appointed head of the Air Corps in 1938, he started to develop the heavy bomber. The result of "Hap" Arnold's vision was the Liberator, the Flying Fortress, and the Super-Fort, the planes which won supremacy in the skies over Europe and the Pacific. Under his guidance the Air Force zoomed to astronomical figures; plane production multiplied by ninety, manpower by a hundred. By the time General Arnold retired on February 15, 1946, for a wellearned rest, he had created the world's mightiest airpower.

No. 2 man in the Air Force was another Pennsylvanian, General Carl Spaatz, Pennsylvania Dutchman from Boyertown, where he was born June 28, 1891. Ordered home from a training-school assignment in World War I, he went to the front instead and with characteristic enthusiasm chased

one German so far that he ran out of gas and barely managed to get back to friendly territory. A bigbomber man, he took his Eighth Air Force to England in 1942 and convinced the skeptical British that daylight bombing was possible. After a year in the Mediterranean straightening out the confusion created by the early days of the invasion, he returned to England in January, 1944, to assume command of all strategic bombing of Germany. Following V-E Day, he moved to the Pacific to take up the same job against Japan, and the Japs very promptly surrendered. When "Hap" Arnold retired, "Tooey" Spaatz was his natural successor. Two other Pennsylvania airmen

Two other Pennsylvania airmen held vital posts during World War II. General Joseph T. McNarney, of Emporium, planned the Army reorganization which went into effect in March, 1942, and became Deputy Chief of Staff under it. After two and a half years in that post he took

General Joseph T. McNarney.



Lt. General Lewis H. Brereton.





General Jacob L. Devers.

command of American forces in the Mediterranean theater and later succeeded General Eisenhower as head of the Army of Occupation in Germany. The other was Lieutenant General Lewis H. Brereton, native of Pittsburgh, who literally fought his way around the world during the war from the Philippines to India, Egypt, and England. Two months after D-Day he was placed in command of the Allied Airborne Army, first such fighting unit ever created.

The fortunes of war brought together two other generals who had grown up in Pennsylvania towns not far apart. York was the home of General Jacob L. Devers, while Lieutenant General Alexander Patch spent his boyhood in Lebanon. Devers held a succession of important commands—Fort Bragg, the Armored Force, the European theatre, and the Mediterranean theater. His final assignment was the command of the Sixth Army Group, which formed the right wing of Eisenhower's forces.

Serving under him was the Seventh Army, headed by General Patch, who had previously fought in the Pacific. At the end of the war General Devers became commander of the Army Ground Forces. Patch was made chairman of a board studying Army reorganization, but died of pneumonia in November, 1945, two days before his 56th birthday.

Pennsylvania's representation on the Army's top command was impressive. When the war ended, two of the four Generals of the Army, three of the twelve full generals, were Pennsylvanians. Besides Patch and Brereton, the Commonwealth had two other lieutenant generals, Stanley D. Embick, Greencastle, chairman of the Inter-American Defense Board, and George Grunert, White Haven, head of the Eastern Defense Command and member of the Army's Pearl Harbor board. Eighteen natives of Pennsylvania held the rank of major general during the war, while four other major generals grew to manhood in

Lt. General Alexander M. Patch.

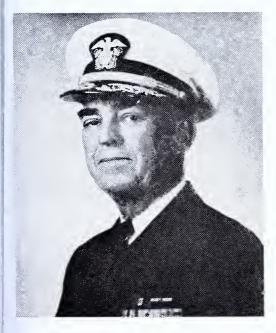


the State. Of the brigadiers, 74 were born in the Commonwealth.

Among the hundred-odd Pennsylvania generals was the youngest major general in the Army, "Slim Jim" Gavin, who once sold newspapers in Mount Carmel, left home to enlist, got into West Point without finishing high school, jumped with his men of the 82nd Division on battlefields from Sicily to Berlin, and finally led his division in a triumphal procession up New York's Fifth Avenue. Major General Lyman L. Lemnitzer, Honesdale, had a career like a character in an E. Philips Oppenheim novel, accompanying General Mark Clark on his pre-invasion secret mission to North Africa, and conducting the negotiations which led to the German surrender in Italy, disguised as a man looking for a dog.

Another outstanding officer from Pennsylvania was Major General Homer M. Groninger, Port Royal, who, as commander of the New York Port of Embarkation, had charge of

Admiral Thomas C. Kinkaid.





Admiral Harold R. Stark.

sending three million soldiers and 35 million tons of supplies to Europe. Major General George F. Lull, Scranton, was Deputy Surgeon General, while Major General John F. Williams, Wilkes-Barre, headed the National Guard Bureau. Brigadiers in important posts included Harold N. Gilbert, Halifax, head of the Office of Dependency Benefits, Luther D. Miller, Leechburg, Chief of Chaplains, and David N. Hauseman, Pottstown, in charge of readjustment of war contracts.

In the upper ranks of the Navy Pennsylvania's representation was almost equally impressive. The Commonwealth could claim five full admirals, seven vice admirals, seventeen rear admirals, and four commodores, not to mention a rear admiral in the Coast Guard and four major generals in the Marine Corps. Top man among them was Harold R. Stark, Wilkes-Barre, who as Chief of Naval Operations prepared the fleet for war, and then commanded



Admiral R. S. Edwards.

U. S. Naval Forces in European A Philadelphian, Admiral Richard S. Edwards, served as second in command of the Navy under Admiral Ernest King during the entire war. An adopted son of Philadelphia, Admiral Thomas C. Kinkaid, fought in the battles of the Coral Sea, Midway, and Guadalcanal, drove the Japs out of the Aleutians, and then, as commander of the Seventh Fleet, crushed the Japanese naval strength in the battle of the Philippines. Two other retired admirals, recalled to active duty, were Arthur J. Hepburn, Carlisle, chairman of the Naval General Board, and Edward C. Kalbfus. Mauch Chunk, Director of Naval History.

Vice Admiral Alan G. Kirk, Philadelphia, was in charge of our amphibious forces during the landings in Sicily, Italy, and Normandy. Vice Admiral John H. Newton, Pittston, served as Admiral Nimitz's deputy and as commander of Allied forces in the South Pacific. Among the

others holding the same rank were Randall Jacobs, Danville, Chief of Naval Personnel, and Wilson Brown, Philadelphia, naval aide to President Roosevelt. Rear Admiral Harold B. Sallada, Williamsport, became head of the Bureau of Aeronautics after commanding a carrier in the Pacific, while Rear Admiral Robert D. Workman, Leaman Place, Lancaster County, was Naval Chief of Chaplains.

The deeds of thousands of other heroes of lesser rank were represented by half a dozen young Pennsylvania airmen: Johnstown's "Buzz" Wagner, who set a brilliant record in the early days of the war, only to meet death on a routine flight; Catasauqua's Tommy Lynch, Pacific ace, who died in combat; Washington's Bill Benn, inventor of the skip-bombing technique, who also died in the Pacific; Erie's Phil Cochran, the "Flip Corkin" of the comic strips, who served in every theater with distinction; Reading's

Vice Admiral Alan G. Kirk.



John Gilpin Bright, who twice made his way back to safety after being declared missing in action; and Oil City's Francis Gabreski, who set a new American record for planes brought down in combat.

Pennsylvania's own 28th Division rolled on to a brilliant record from the time it was inducted into Federal service under Major General Edward Martin on February 17, 1941. After training at Indiantown Gap and in the South, it went overseas on October 8, 1943, going into action for the first time on July 22, 1944. In its monthlong battle in the hedgerows of Normandy, the 28th earned from the Germans the respectful nickname of the "Bloody Bucket" Division. Entering Paris on August 29, it chased the Nazis through Belgium and Luxembourg, becoming the first division to enter Germany in force on September 11.

After suffering heavy losses in the battle of Huertgen Forest during No-

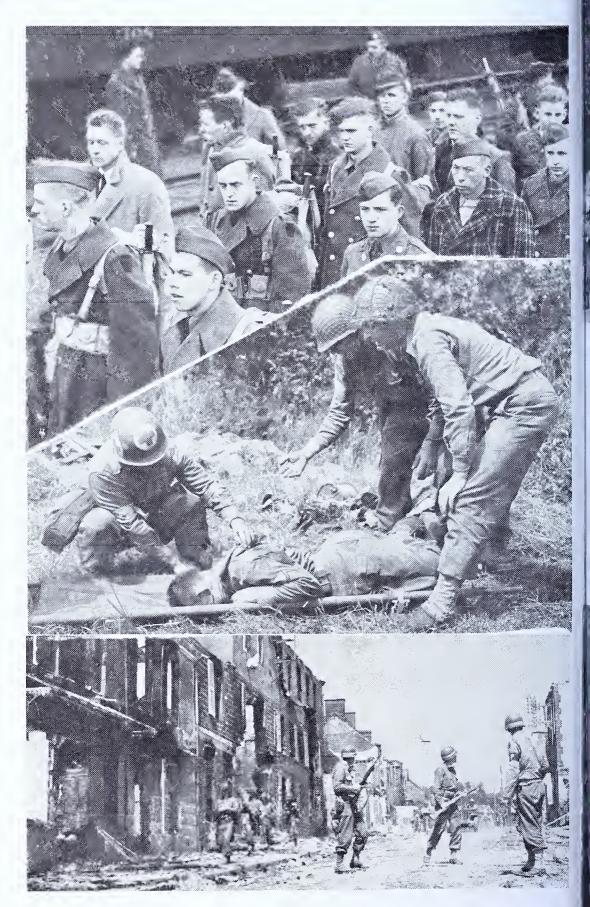
Colonel Francis Gabreski.





Major General James M. Gavin. -

vember, the 28th was assigned to a quiet spot on the front for a rest. There it received the full brunt of surprise Nazi counter-attack, launched on December 16. Five German divisions smashed at the weakened 28th, but still it held its ground. With their timetable disrupted, the Nazis had to bring up four more dithey could visions before through the position. Shattered by these repeated blows, the 28th was at last forced to withdraw, but not until precious time had been gained to bring up reinforcements and stem the Nazi advance. Reconstituted after the Battle of the Bulge, the Keystone Division joined the Seventh Army, capturing Colmar and crossing the Rhine before the German surrender. The wearers of the red keystone came back to the Gap in August, 1945, and in December the division was deactivated, to be born again in 1946 as part of the reorganized Pennsylvania National Guard.





The 28th parades down the Champs Elvsees in Paris.

For one contribution Pennsylvania had only regret. The lives of more

Top, opposite page: The 28th Division arrives at Indiantown Gap, February, 1941, some even without uniforms. Center: The 28th lands in France, July, 1944, and receives its first casualties. Bottom: Men of the 28th enter a captured French village.

The Division suffers heavy casualties in Huertgen Forest.

than 33,000 of her young sons and daughters were sacrificed upon the altar of liberty during World War II. The galaxy of gold stars shining in Pennsylvania windows was a silent reminder that freedom can never be cheaply bought.

Survivors of the Battle of the Bulge rest in Bastogne.







Post headquarters at Indiantown Gap Military Reservation.

11.

CAMPS AND DEPOTS

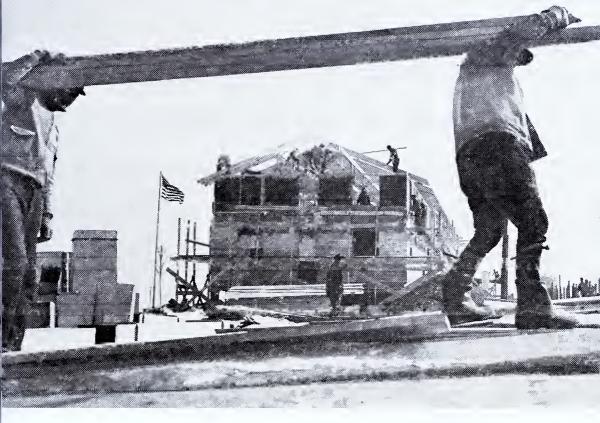
Pennsylvania was the location of forty important military and naval installations in World War II. Although not primarily a training area, it contained two large camps. One was truly Pennsylvania's own, since Indiantown Gap Military Reservation, the peacetime home of the Pennsylvania National Guard, was only leased to the Federal Government for the duration of the war. Less than ten days after the War Department took over the Gap on September 30, 1940, workmen moved in for a vast construction program which eventually surrounded the 33 original buildings with nearly 1400 others. Even before the camp was officially opened, on March 3, 1941, the first units of the 28th Division were already drilling amidst piles of lumber.

A month after Pearl Harbor the Gap became a staging area. Among the famous fighting units which received their final check-up there before going overseas were the First, 37th and 77th Divisions, and the Third and Fifth Armored. Another special activity was the Transportation Corps Unit Training Center, established in July, 1942, where prospective Army stevedores drilled on two dry-land ships, the S. S. Manada and the S. S. Swatara.

In December, 1944, the Army Service Forces Personnel Replacement Depot was transferred from Camp Reynolds to Indiantown, but six months later this depot was moved south to Fort Jackson to make room for the Gap's most welcome mission, serving as a separation center for soldiers from Pennsylvania, Ohio, and lower Michigan. Discharging as many

as 4000 persons a day, it returned a total of 449,569 men to civilian life from June 10, 1945, to March 23, 1946. A few weeks after the separation center closed, the Army vacated the reservation to make room for the new National Guard.

Camp Reynolds at the opposite end of the State had a briefer history. Its site was selected in June, 1942, con-

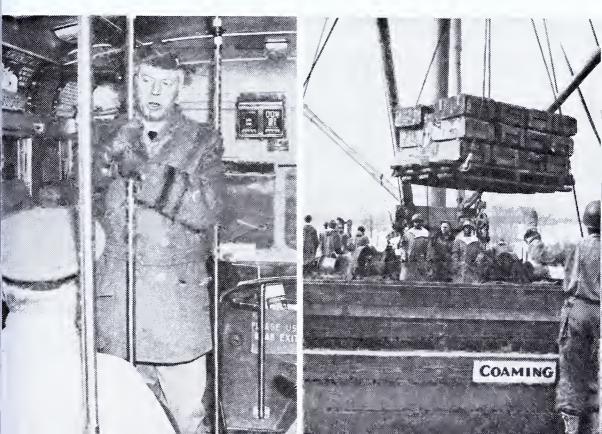


Workmen rush new buildings to completion at the Gap in the winter of 1940-41.

struction began a month later, and the first troops arrived in February,

Major General Edward Martin, commanding the 28th Division, conducts a group of visitors on a tour of the new buildings. 1943. Originally known as Shenango Personnel Replacement Depot, it was

Port Battalions training at the Transportation Corps Unit Training Center, which operated at the Gap.



renamed in honor of Major General John F. Reynolds, a native of Lancaster, killed at the battle of Gettysburg. The camp served as a staging area for Army Service Forces personnel assigned to Europe or the Caribbean until the end of 1944. For another year it was used as a prisoner of war camp, with a salvage center as a minor activity, and was then closed down completely.

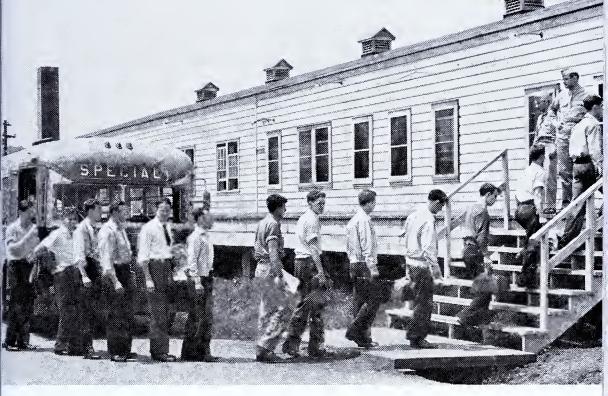
One installation which nearly a half million Pennsylvanians would long remember was the New Cumberland Reception Center, which from February 13, 1941, to July, 1945, gave most inductees from the State their first taste of Army life. Another activity at New Cumberland was the Special Training Unit, which transformed 13,000 men, previously unable to read and write, into successful soldiers. In August, 1945, the

buildings at the Reception Center were converted into a disciplinary barracks.

Across the Susquehanna from New Cumberland was the Middletown Air Service Command, established 1917. It stocked more than 250,000 kinds of parts for combat planes, shipping them out all over the world 24 hours a day. Another important function was the maintenance of planes brought in, sometimes for a routine overhaul, sometimes for major repairs which could not be made overseas. Middletown was the only depot which could handle the C-54, the largest transport. As each aircraft arrived, every loose article inside was removed and carefully "binned" for return to the ship on its departure. Workmen were sometimes surprised to find a couple of bicycles or a baby carriage, but these, too, went back

Men at Camp Reynolds stand at attention as the bugle sounds retreat.





A group of selectees arrives at New Cumberland Reception Center.

into the plane. Every part of each airplane was inspected and replaced when necessary. Motors were torn down completely; parts were measured with a micrometer, and new pieces installed when wear was revealed. If the needed part was not in stock, the machine shop manufactured it. Under signs which declared: "A mistake isn't an error; it's murder," workmen put the motors together again and gave them a test run of six hours before they were once more installed in the plane. rapid expansion at Middletown transformed the pre-war force of 500 civilians into an army of 18,000 at its peak, nearly half of them women. Many of these employees trained at the State School of Aeronautics, which graduated 12,330 persons during the two years it operated in the State Farm Show building in Harrisburg. When the school closed down, the engine-overhaul

shop moved into the building, where it became the largest such shop under one roof in the world. Also under the Middletown Air Service Com-

Middletown employees working in the pilot's compartment of the C-54.







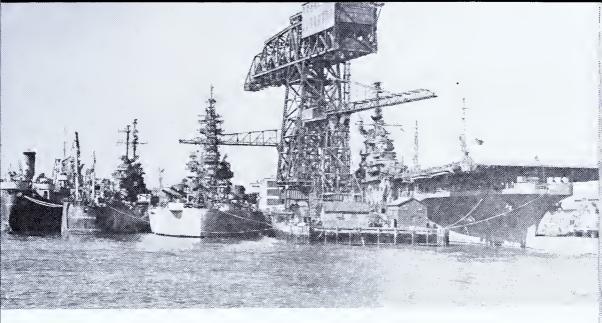
Above: Patients at Deshon exercising. Left: Cornerstone at the Carlisle Army Medical Field Service School. Below: Scenes at Valley Forge, Deshon, and Carlisle.

OF CHANCES AND HOSTILITIES IS AS
GREAT A MIRACLE AS TO CREATE HIM
JEREMY TAYLOR

mand was Tobyhanna Military Reservation near Scranton, which served as a training center for Air Force service units in 1943, and was then converted into a storage depot.

Three important training centers





Fighting ships of the U. S. Navy anchored beside a hammer-head crane at the Philadelphia Navy Yard. Second from the left is the U. S. S. Wilkes-Barre. Third from the left is the U. S. S. South Dakota, the famous "Battleship X" of the early days of the war.

were located in the Harrisburg area. The highly-secret Army Air Force Intelligence School operated in the old Harrisburg Academy buildings from the summer of 1942 until April, 1944. Immediately following its closing, the Navy established its Photo Reconnaissance Training Detachment at the Harrisburg Airport to train pilots in mapping terrain with automatic cameras. Even more important than these was the Army Medical Field Service School, established at Carlisle Barracks in 1920, where every doctor who entered the Army had to learn to adapt himself to field conditions. The School also trained dentists, veterinarians, and administrative officers of the Medical Corps. During the emergency it graduated 27,853 officers, including representatives of every medical school in the country. Early in 1946 the Field Service School was transferred to Texas to be replaced by the Army Information School.

The Army Medical Corps was also represented in Pennsylvania by two general hospitals. Deshon, converted

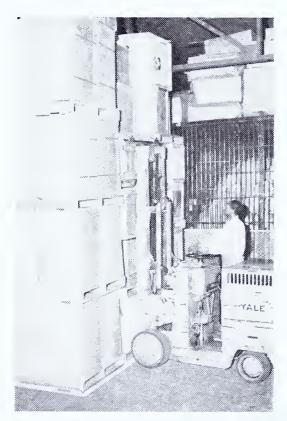
from the unused State Tuberculosis Sanatorium at Butler, admitted its first patient December 1, 1942; Valley Forge, near Phoenixville, was formally opened on February 22, 1943. While both were equipped to treat any kind of disease or wound, each had a specialty. Valley Forge was the East Coast center for eye injuries, and Deshon was one of three Army hospitals treating affected hearing. Both hospitals were scheduled to be taken over by the Veterans Administration by the end of 1946. Wounded sailors and marines were treated at the Philadelphia Naval Hospital, which was the Navy's center for the blind and had one of the Navy's two artificial limb laboratories.

Pennsylvania's important geographical and industrial position was reflected by nearly a score of supply depots and production facilities operated by the armed forces. One of our fleet's most important bases was the Philadelphia Navy Yard, which at one time had 70,000 persons working within its gates. During the war

it built fifty warships, including 22 destroyer escorts, lourteen LST's, three of the Navy's ten modern battleships, two cruisers, and a carrier. Three other carriers were completed after the end of hostilities. In addition to this construction, PNY fitted out 480 other vessels launched elsewhere. Ships of seven nations put into the Yard to be restored to fighting shape. In all it worked on 1210 vessels during the war. With the return of peace the installation was renamed the Philadelphia Naval Base and became headquarters for the inactive 16th Fleet, popularly known as the "mothball fleet."

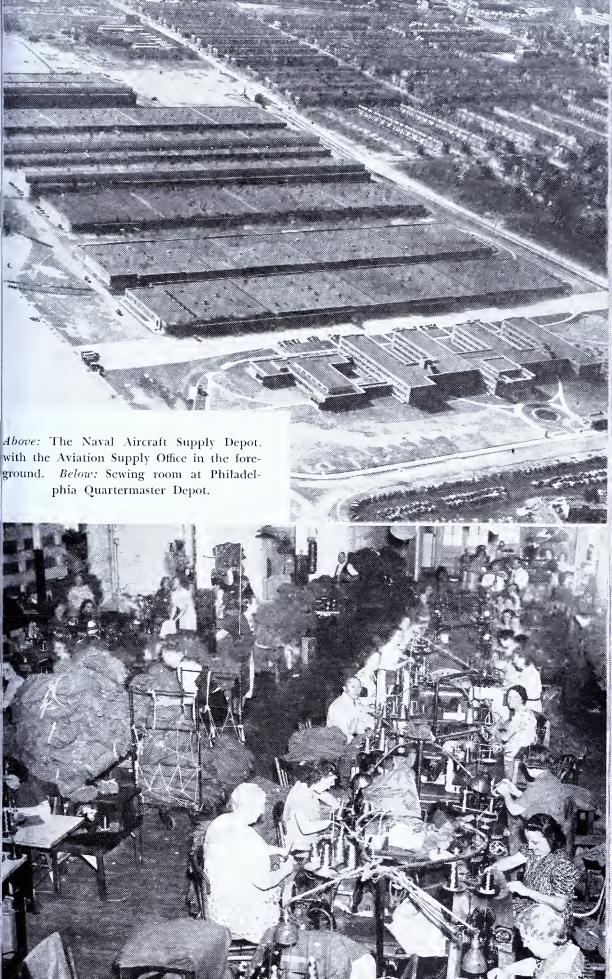
Inside the Navy Yard is a separate organization, the Naval Air Material Center, which included a 29-year-old factory that produced 156 flying boats during the war, an experimental sta-

An electric truck moving palletized stores at the Marine Corps Depot of Supplies.



tion for testing and developing new ideas, and an auxiliary air station. Its Naval Aircraft Modification Unit, which altered planes to meet new specifications, moved out to the former Brewster plant at Johnsville early in Another important center in Philadelphia was the Naval Aviation Supply Depot, one of two in the country. With it was located the Navy's only Aviation Office, responsible for the procurement and distribution of all plane equipment. The Willow Grove Naval Air Station gave specialized instruction in ferrying planes, formation flying, and anti-submarine patrol. The Navy also had an Ammunition Supply Depot at Fort Millin. The Marine Corps was represented by its Depot of Supplies, the Marines' only manufacturing plant and its main distributing center.

The Army likewise made good use of the Philadelphia area. The Philadelphia Quartermaster Depot was the central procurement agency for military uniforms, purchasing in one year enough cloth to wrap ten around the earth. A huge manufacturing division served as a production laboratory and filled emergency orders. The Depot also made all the Army's flags and bought all the medals and band instruments. Equally important was Frankford Arsenal, which was the only Government arsenal manufacturing small ammunition until World War II began. It then provided the plans and the workers for the new plants which sprang up. It was also responsible for multiplying the number of American optical workers by seventy during the war.





A girl in Frankford Arsenal's Optical Shop applying rouge on a lens-polishing machine.

The Philadelphia Signal Depot and Signal Corps Procurement District, charged with the purchase and storage of all types of communication equipment, was the largest and most important center of its kind in the United States. The Chester Tank Depot was established as a receiving and distributing center for combat vehicles.

Sorting small items at the Philadelphia Signal Corps Depot.



Largest of three in the nation, it modified tanks to meet new designs and prepared them for shipment overseas. The Philadelphia Cargo Port of Embarkation handled 10 per cent of the Army's outgoing cargoes, including 1,340,000 tons of live ammunition. Every precaution was taken to prevent a catastrophic explosion at the Hog Island loading docks. A constant security patrol guarded against accident or enemy sabotage. Philadelphia's nearby Municipal Airport was closed for a year and a half because of the danger that a plane crash might touch off the stored ammunition.

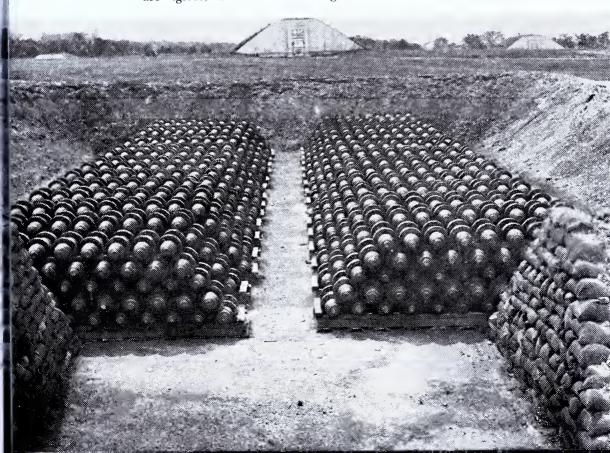
Further inland were five other depots. The New Cumberland Army Service Forces Depot, one of twelve in the country, was a shipping center for supplies for five of the six branches of the Service Forces. A few miles west of it was the Mechanicsburg Naval Supply Depot, largest of four in the United States. A distribution point for everything from garbage cans to machine tools, Mechanicsburg was the only supply center for destroyer escort parts. It was also the center for technical information on internal combustion engines, landing craft, and DE machinery, and regulated the flow of all spare parts to advance bases.

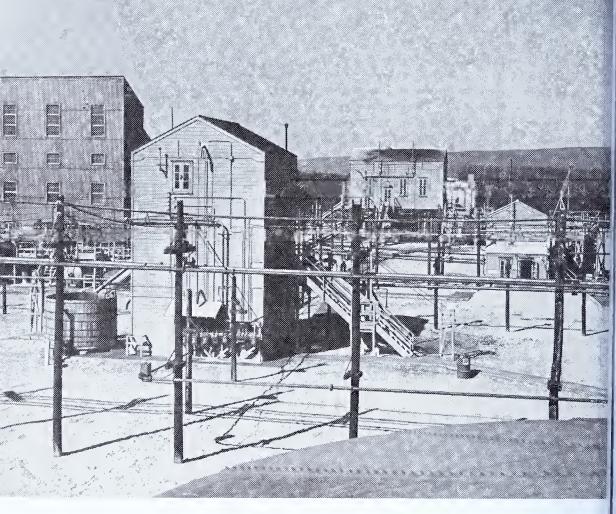
Largest in area of all Pennsylvania's military installations was the 21,000-acre Letterkenny Ordnance Depot, which swallowed up an entire township and half a mountain a few miles northwest of Chambersburg. Its primary task was storing bombs and shells, which were housed in 800 "igloos," so-called from their resemblance to an Eskimo hut. It was also



Aerial view of the New Cumberland Army Service Forces Depot, taken by the Naval Photo Reconnaissance Training School.

500-lb. bombs stored in barricaded plot at Letterkenny Ordnance Depot. In the background are "igloos," also used for storing ammunition.





Production line at the Pennsylvania Ordnance Works at Williamsport.

a depot for other types of ordnance, including combat vehicles, which it repaired and modernized. During the war it handled three million tons of ammunition and other ordnance. The only explosion occurred when three half-inch cartridges fell off a stack. Both it and Mechanicsburg were scheduled to be permanent installations.

Another ordnance depot was located at Cressona, near Pottsville. The largest reclamation center in the world, it salvaged ordnance items, repairing those which were serviceable and scrapping others. Ammunition was also stored at the Susquehanna

Ordnance Depot, south of Williamsport, which had originally been the Pennsylvania Ordnance Works.

Pennsylvania Ordnance Works was one of three explosives plants constructed in the State for the War Department. It was a weird array of overhead pipelines connecting oddshaped gray buildings, where gigantic "milkshakers" mixed batches TNT. A similar but larger plant in the western end of the State was the Keystone Ordnance Works, a few miles south of Meadville, which set a production record unequalled by any other TNT plant. A different type was the Cherokee Ordnance Works at

Danville, which manufactured formaldehyde and hexamine, ingredients of the super-explosive, RDX. The York Naval Ordnance Plant was devoted to the production of antiaircraft guns.

In addition to all these establishments, there were a dozen others of lesser importance, including the Reading Ordnance Service Command Shop, the Jersey City Quartermaster Sub-Depot at Fleetwood, the Marietta Holding and Reconsignment Point, the Military Police stockade at Harrisburg, and the Army Air Force stations at Philadelphia, Pittsburgh, Harrisburg, Reading, and Connellsville. Mention of name and location of one or two others was still contrary to War Department policy.

Other naval and military posts sprang up during the war on the campuses of thirty-eight of Pennsylvania's colleges. There soldiers and sailors assigned for training lived under military regulations while they attended classes. For the Army Air Force twenty colleges gave pre-flight 22,000 prospective instruction to pilots. The Army Specialized Training Program and other special Army schools operated in sixteen colleges with more than 21,000 trainees. One of these alone, the Army Postal School at West Chester State Teachers College taught 3,755 soldiers how to handle Army mail. The fifteen schools with naval training contracts reported a total of 23,314 future officers prepared for the Navy and the Marine Corps. The University of Pennsylvania led the colleges of the State with a total of 9,075 Army and Navy trainees, while Penn State and Pitt followed with 7,745 and 7,051 respectively.

More than 60,000 soldiers and sailors were trained at Pennsylvania colleges.





The first men line up for induction in Philadelphia, November 1940.

III.

VOLUNTEERS FOR DEFENSE

Millions of Pennsylvanians made their contribution to victory by serving without pay in emergency organizations. Of the nearly 9,000 persons who made up the State Selective Service System, four-fifths received no compensation. With no other reward than a special medal authorized by Congress, 5,609 of these 7,000 volunteers remained at their posts for at least two years, and 809 stayed on the job for a full five years.

On the shoulders of these men rested the democratic responsibility of choosing which of their fellow-citizens should be sent off to war and possible death. The whole process represented democracy in action. Draft board members were recommended by local officials, subject to State and Federal approval. Policy was determined in Washington and Harrisburg, but local boards could interpret regulations to meet individual circumstances. An appeal system protected the registrant against any possible injustice.

So fairly did the draft boards function, however, that not one classification out of one hundred was reversed by appeal to higher authority. It was also to the credit of the Selective Service volunteers that only a few minor irregularities were ever charged against them and not one official was indicted or tried. They were responsible for the induction of 844,909 men up to September 30, 1945, at a peak rate of nearly 60,000 a month. This was nearly four times the total of 223,-122 Pennsylvanians drafted in World War I.

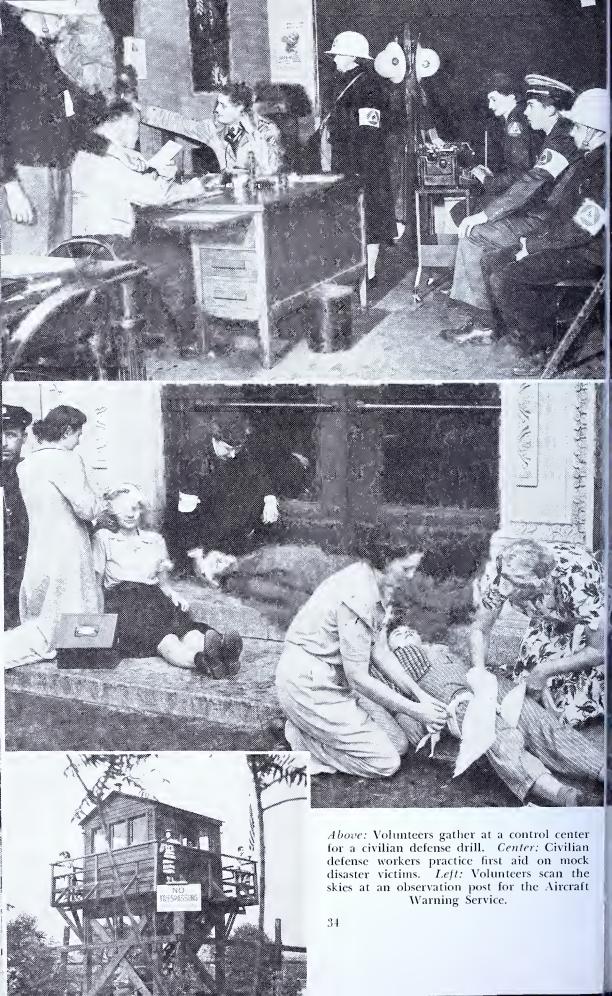
Average cost of each induction was \$16.15, as compared with \$11.23 in 1918. Part of this increase was caused by the "Pennsylvania Plan," which was adopted by other states after it had been tried out here. This permitted an inductee to return to his home after passing his final physical

examination in order to wind up his civilian affairs. Under the previous system a draftee had to quit his job before he knew if he would be accepted for service.

Another Pennsylvania experiment was a special draft board set up in Lewisburg Federal Penitentiary to determine what men with criminal records had been sufficiently rehabilitated to be inducted into the Army. The plan was later extended to the State prisons, permitting the parole of 1,649 persons into the armed forces up to July 1, 1945. This was far more than the total of 1,059 Pennsylvanians who were sent to jail for violations of Selective Service regulations. About two-thirds of these were conscientious objectors who preferred prison to military service; twelve hundred other Pennsylvania objectors, one-third of them from Lancaster County, were as-

A local draft board interviews a selectee.





signed to Civilian Public Service projects.

The State's 422 local boards and fifteen appeal boards comprised the largest Selective Service system under one headquarters in the nation. Its first director was a civilian, Dr. William Mather Lewis, then president of Lafayette College. He was succeeded by Lieutenant Colonel Benjamin F. Evans, Wilkes-Barre, Colonel George H. Hafer, Harrisburg, Colonel Richard K. Mellon, Pittsburgh, Colonel John McI. Smith, Harrisburg, and Lieutenant Colonel Henry M. Gross, Harrisburg.

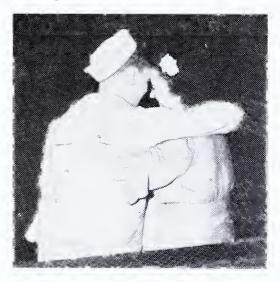
The largest of the armies of civilian volunteers enlisted under the banners of civilian defense. At its peak, on November 30, 1943, it numbered 1,661,040, of whom 636,497 were in the Citizens Defense Corps. They took part in seventeen state-wide blackouts and eight daylight drills from the time the first test was called in June, 1942, until the last was held on April 13, 1914. They cared for twenty million dollars' worth of OCD equipment, including fourteen hundred 500-gallon pumps. Although the Citizens Defense Corps was fortunately never called out by enemy action, the members proved their efficiency in meeting natural disaster by mobilizing for wrecks, explosions, fires, floods, and tornadoes.

The War Services of civilian defense were equally vital. They helped to establish 76 Child Care Centers, which tended the children of 3,574 working mothers, and encouraged the establishment of 75 Teen-Age Centers to provide recreation for 15,000 boys and girls. An army of half a million salvage workers collected almost two

and a half million tons of waste paper, tin cans, and metal scrap, and nearly 150,000 pounds of rags and fats. The Victory Garden Committee raised the number of gardens in Pennsylvania to a million and a half. Under the supervision of competent instructors 111 Food Conservation Kitchens established the were in State.

In the Military Ballot Canvass of 1944 civilian defense workers gathered the names and addresses of 550,-000 service men and women. defense organization was also responsible for setting up the State's rationing system and administering it for the first six months. Direction was in the hands of 1200 local defense councils, headed by the State Council of Defense, which was created by the proclamation of Governor James on April 17, 1941, and dissolved by Governor Martin on October 31, 1945. Two college presidents served in turn as executive director, Dr. A. C. Marts, of Bucknell, and Dr. Ralph Cooper Hutchison, then of Washington and

Blackouts had some advantages for lovers. A photographer with an infra-red camera caught this couple in the darkness.



Jefferson. A. Boyd Hamilton was the Council's secretary until his death on June 1, 1945.

One branch of civilian defense was under the direct control of the War Department. This was the Aircraft Warning Service, which plotted the course of every plane flying across Pennsylvania from December 8, 1941, to October 4, 1943. Volunteers recruited by the American Legion manned 1200 observation posts on a 24-hour-a-day basis. Their reports of each passing aircraft went to a filter center, where other volunteers pushed markers over huge maps to indicate the progress of the plane. Filter centers operated in secret locations in Philadelphia, Harrisburg, and Pittsburgh.

Some thirteen thousand Pennsylvanians served in jobs which earned them little but the criticism of their neighbors. The original members of the State's 422 ration boards might not have accepted their appointments if they had realized how burdensome and unpopular their task was to become. As commodity followed commodity on to the ration list, and regulation piled upon regulation, they struggled manfully to follow the rules and give everyone his fair share. In spite of enormous temptation to black-market profits, only one ration board member was ever convicted of a violation. When the last complaint about the allotment of gasoline had died away, their fellow-citizens had to concede that the rationing volunteers

Schoolteachers acting as volunteer registrars for distribution of War Ration Book II.





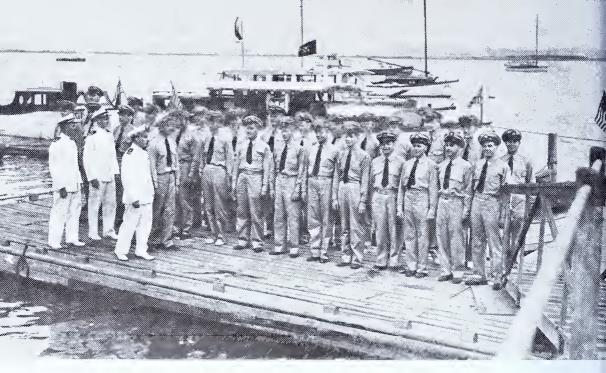
Members of the Civil Air Patrol in uniform, racing to their planes for a drill.

had done the best possible job in the circumstances. Praise was also due to the State's school-teachers who had distributed 27 million food ration books and two million books of gasoline stamps.

Some of the civilian volunteers served in uniform. The Civil Air Patrol wore regulation G. I., except for a distinguishing red shoulder loop. There were 3,000 adult members and 5,500 cadets in the Pennsylvania Wing. Two hundred of its fliers spotted submarines for the Atlantic Coastal Patrol from the early days of the war until August 31, 1943. Others flew aiming and tracking missions for anti-aircraft practice and ferried Army planes. Two of its members were killed on these duties. The CAP also operated an industrial courier service, speeding emergency shipments to keep war plants in operation. Their only compensation was a subsistence allowance when on active duty.

A State Guard doing sentry duty at a Pittsburgh bridge in the early days of the war.





A flotilla of the Coast Guard Auxiliary lined up for inspection.

Another group of volunteers replaced the National Guard when it was inducted into Federal service. The State Guard, originally known as the Pennsylvania Reserve Defense Corps, had an authorized strength of 5,000 men. Equipped with Army uniforms

Member of the Volunteer Port Security Force checking papers at a Philadelphia pier.



and weapons, they held weekly drills and had seven days of military training at Indiantown Gap each year. The day war was declared, the Guard mobilized to maintain a 24-hour vigil at strategic points throughout the State, and stayed in the field for forty days. Only three other states had their militia ready to mount guard, and no other kept its force on duty so long. The State Guard was also called out several times for patrol duty during disasters. It was scheduled to continue in service until the new National Guard could be organized. An auxiliary military organization was the Minute Men, who furnished their own equipment and had an armband as their uniform.

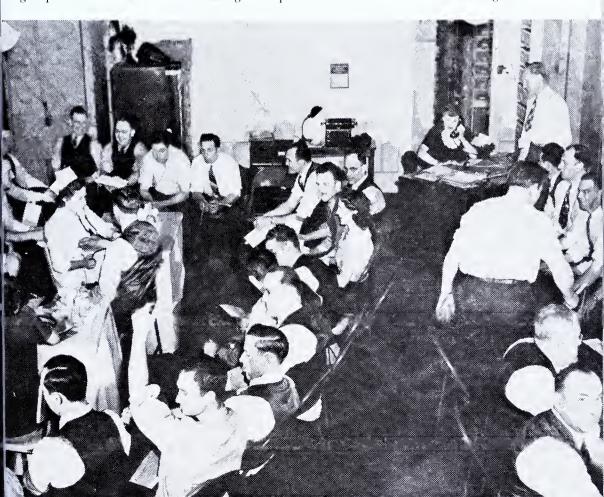
Valuable service was also rendered by the Temporary Reserve of the Coast Guard. This organization grew out of the Coast Guard Auxiliary, which was formed in 1939 by the small-boat owners along the shore. At the outbreak of war more than three-fourths of the 3,600 members of the Auxiliary in the Fourth Naval District (including Pennsylvania, New Jersey, and Delaware) became Temporary Reserves. For twelve hours each week they were part of the regular Coast Guard, wearing its uniform and performing its duties.

In the early days of the war they chased German subs with no other weapon than ship-to-shore radio, and their reports were responsible for the sinking of several U-boats. They acted as river traffic cops off Hog Island, keeping passing vessels within the speed limit lest a sudden wave set off the explosives being loaded there. Their tiny craft escorted ammunition-laden ships down the river and maintained a 24-hour patrol along the Delaware. Others manned

look-out towers on the coast or served at headquarters. Since men likely to be drafted were barred, most members were middle-aged, some past fifty. In spite of the fact that they received no allowance for expenses, enthusiastic volunteers organized flotillas as far inland as Reading, Harrisburg, and Lancaster, paying their weekly transportation out of their own pockets.

Another section of the Coast Guard Temporary Reserve was the Volunteer Port Security Force. The idea for this organization, which later spread to 21 other ports, originated in Philadelphia. The first group of volunteers began their 22-hour training course on August 13, 1942. As their instruction was completed, they were assigned to guard duty along the

The Blood Donor Centers were one of the vital activities of the American Red Cross. Here a group of volunteers from the Westinghouse plant at Sharon wait at the Pittsburgh center.





One of Pennsylvania's many USO centers, which were "a home away from home" for thousands of servicemen.

piers, checking credentials and watching out for fire or sabotage. So useful did they prove that the original regiment of one thousand men was enlarged to three thousand. More than 7,500 different persons served in the VPSF, including 300 women. Not a single serious loss was suffered in any facility under its protection or that of the Auxiliary. Both organizations were released from active duty on June 30, 1945.

Among the many groups which contributed time and money to relieve the sufferings of war, the American Red Cross furnished an impressive array of statistics. The members of Pennsylvania's 110 Red Cross chapters gave 14,100,318 hours a year to volunteer service. The Red Cross War Fund received \$52,048,213.61 from Pennsylvanians. To 490,299

servicemen and their families the State's chapters lent a helping hand by verifying the need of an emergency furlough, finding a temporary loan, or interpreting a government regulation. Aid was also given to 35,403 civilians and 30,893 ex-servicemen. Blood donor centers collected 1,367,-310 pints of blood; the center at Harrisburg had the highest per capita record of contributions in the nation. recruitment Through committees. 5,714 Pennsylvania nurses were assigned to duty with the armed forces. They were replaced in part by 15,013 volunteer nurses aides trained by the Red Cross. Other figures ran into the millions: 5,614,418 prisonerof-war parcels packed; 100,169,792 surgical dressings made; 2,329,500 garments completed. This incomplete list only hints at the tremendous output of the Red Cross workers.

Statistics could not tell the story of thousands of volunteers who lightened the leisure hours of the soldiers and sailors stationed in or passing through Pennsylvania. every city near an important installation clubs appeared to give the serviceman "a home away from home." Some were supported by USO and its member agencies, others by local funds, but they were operated largely by persons who willingly gave their time without compensation, girls acting as hostesses, matrons handing out snacks. One club, the USO-Labor Pavilion on Reyburn Plaza, was constructed entirely by volunteer labor from Philadelphia's unions. At their peak, in 1944, 139 USO agencies were operating in 63 Pennsylvania cities.

Money was contributed as freely as time. In 1941 and 1942 Pennsyl-

vanians gave \$4,292,621 to the USO. Value of gifts in cash and supplies to the various agencies furnishing war relief to our allies was estimated at five million dollars during the same period. In 1943 collection for all these organizations was consolidated as the Pennsylvania War Fund, cooperating with the Community Chest drives. In three years Pennsylvanians subscribed \$26,794,132 more to the War Fund. Altogether more than thirty-six millions of dollars were contributed to aid our servicemen and to care for our suffering allies in Europe and Asia. Purchases of War Bonds during the eight War Loan Drives totaled \$9,108,000,000, averaging 136 per cent of quota. Federal taxes paid in the State rose to almost four billion dollars a year in 1945, as much as the entire nation paid in the 1920's.

Floats like these appeared in parades during War Loan Drives.





The Army-Navy "E" pennant was awarded to 407 Pennsylvania plants.

IV.

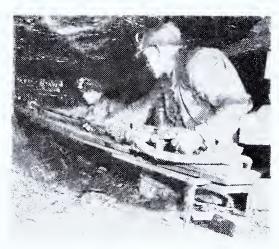
ARSENAL OF AMERICA

Pennsylvania's war plants received high grades on their production record. While the State had only 6.5 per cent of the government contracts, its factories earned 9.5 per cent of the Army-Navy "E" awards and 12.6 per cent of the Maritime Commission "M's." Out of 4283 grants of the Army-Navy "E," 407 went to Pennsylvania plants. One of the eight firms in the country to win six stars for their "E" flags was the Midvale Company of Philadelphia, while Pennsylvania had 36 of the 206 plants which flew a five-star flag. One company alone, the Carnegie-Illinois Steel Corporation, had a total of 47 stars on the flags flying over its Pennsylvania plants.

According to the official figures on contracts for the supply of war goods granted during the five years ending May 31, 1945, Pennsylvania ranked seventh among the states with \$12,917,797,000. The Commonwealth's share

was actually higher, however, since this total did not include sub-contracts or indirect contributions in the form of raw materials. More than 30 per cent of the nation's coal, for example, came from Pennsylvania. The State's output of anthracite and bituminous reached 208,521,007 tons in 1944, the highest level in fourteen years in spite of the fact that mine employment was at a record low.

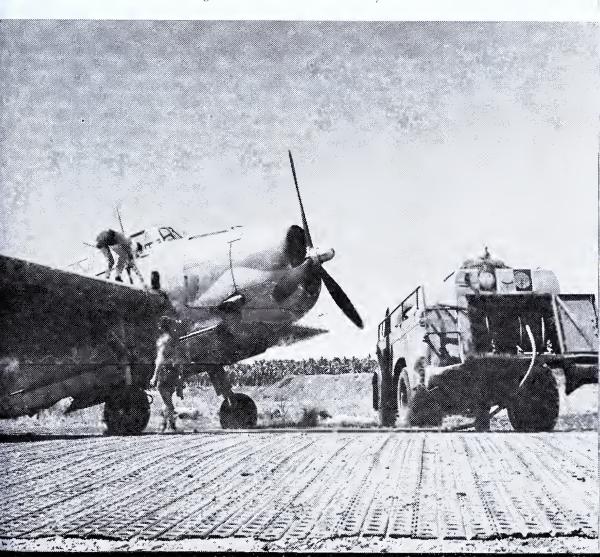
Other natural resources were also important. Pennsylvania was first in the production of Portland cement, vital to wartime construction. Iron ore came from the two-century-old mines at Cornwall, which once furnished the material for muskets for



Pennsylvania miners produced 30 per cent of the Nations coal.

Washington's Army, and from the Scotia banks in Centre County. While the State had dropped from the first place it once held in the petroleum

Pennsylvania refineries produced 100-octane gasoline to keep the fighting planes in the air. The steel landing mats also came from Pennsylvania mills.



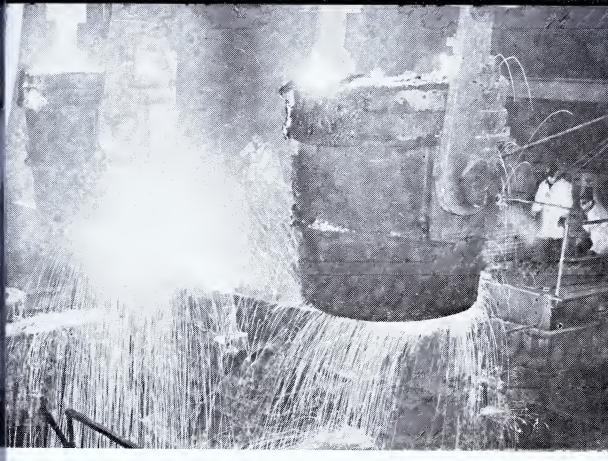
industry, it still produced the highest quality of lubricating oil, which was necessary to keep planes flying and tanks rolling. With the development of new methods the industry was able to step up production in 1942 to 17,779,000 barrels, the second highest year since 1897. Pennsylvania's 80,000 wells were too old, however, to maintain this pace, and their output dethereafter, dropping below 13,000,000 barrels in 1945. Refineries converted crude oil into 100-octane gasoline. One Pennsylvania oil company alone shipped 25,244,505 barrels of this high-powered fuel during the four war years, besides 15,000,000 barrels of other petroleum products. In May, 1945, its Marcus Hook refinery blended 1,300,000 barrels of 100octane gas for a new monthly record.

One of the most vital of all the materials of war was steel. Pennsylvania not only retained its leadership in this industry, but increased its annual capacity by 4,700,000 tons, more than twice as much as any other state. By 1945 capacity was rated at over 30,000,000 tons, and actual production was 29,679,000. This was 31 per cent of the national production and 20 per cent of that of the world. Pennsylvania steel mills alone almost equalled the output of the entire Axis in the closing years of the war. The State was first in output from openhearth furnaces and Bessemer converters, and second only to Ohio in electric-furnace steel.

Much of this steel went into the building of the vast fleets of combat and transport vessels which covered the seven seas. In its direct contribution to the launching of these craft Pennsylvania stood fourth with total contracts of \$1,776,347,000. Shipyards inside the State built three battle-ships, two heavy cruisers, five light cruisers, four carriers, two auxiliary carriers, and fourteen submarines, a respectable task force in itself. Among the smaller craft constructed were 34 destroyer escorts, 277 LST's and 108 LCM's. Yards at Pittsburgh, Ambridge, and Eric joined Philadelphia and Chester in producing these vessels.

While only one Pennsylvania company launched merchant vessels, Sun Ship at Chester was the largest producer of tankers in the world. Sun Ship designed the T2 tanker, launched the first one, the S. S. Gettysburg, on February 2, 1942, and built one-third of the 525 turned out during the war. It delivered in all 228 vessels, including hospital, troop and cargo ships. Many other firms took part in the shipbuilding program by furnishing equipment. Twenty-seven Pennsylvania plants won the Maritime "M" award for their record in helping to build ships for the Maritime Commission. A four-star "M" flag flew above the Westinghouse factory at Lester, which produced more than half the turbines and gears for the fast Victory ships.

In the production of ordnance, which included guns, ammunition, and vehicles, Pennsylvania ranked third, behind Michigan and New York, with \$4,698,188,000 in orders. Three important ordnance items were exclusively Pennsylvanian. One was the 36-inch mortar, which hurled the heaviest projectile ever known. Contracts for this weapon were awarded to the Mesta Machine Company of Pittsburgh in May, 1944. The head



The output of two open-hearth furnaces being teemed into a single ingot mold to be forged into armor plate.

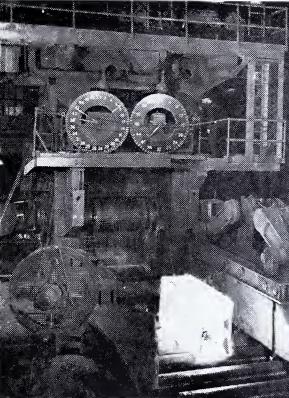
of the corporation himself donned overalls to work on the problem of

A Bethlehem blast furnace producing pig iron to be converted into steel.

designing the gun and mount and overcoming the 25-inch recoil. By

A white-hot steel ingot receives its first rolling at a Pittsburgh mill.





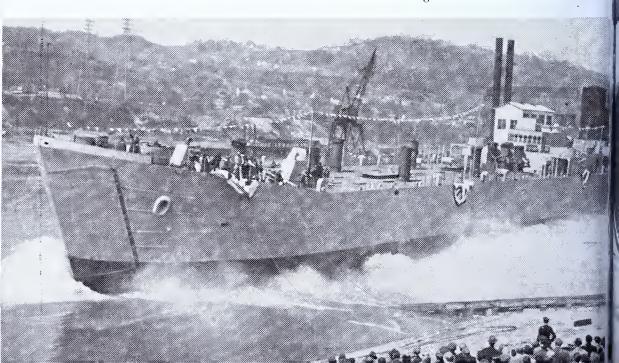


A Drayo-built LST unloads its cargo of gasoline drums in the Gilbert Islands.



The U.~S.~S.~Wisconsin, one of the world's four mightiest battleships, built at Philadelphia Navy Yard.

An LST slides into the Ohio at Ambridge.

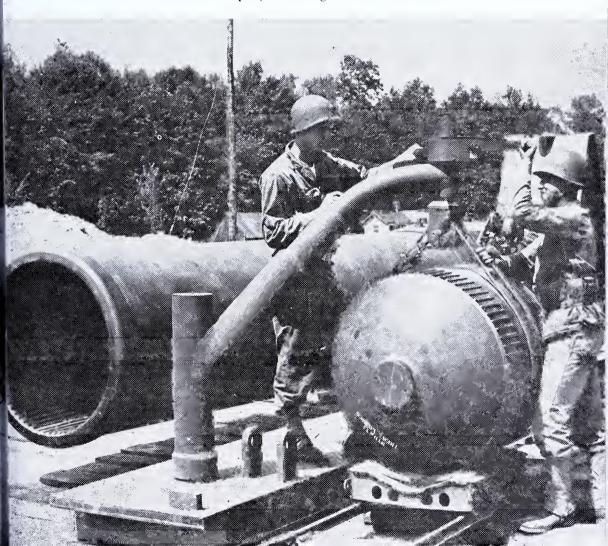


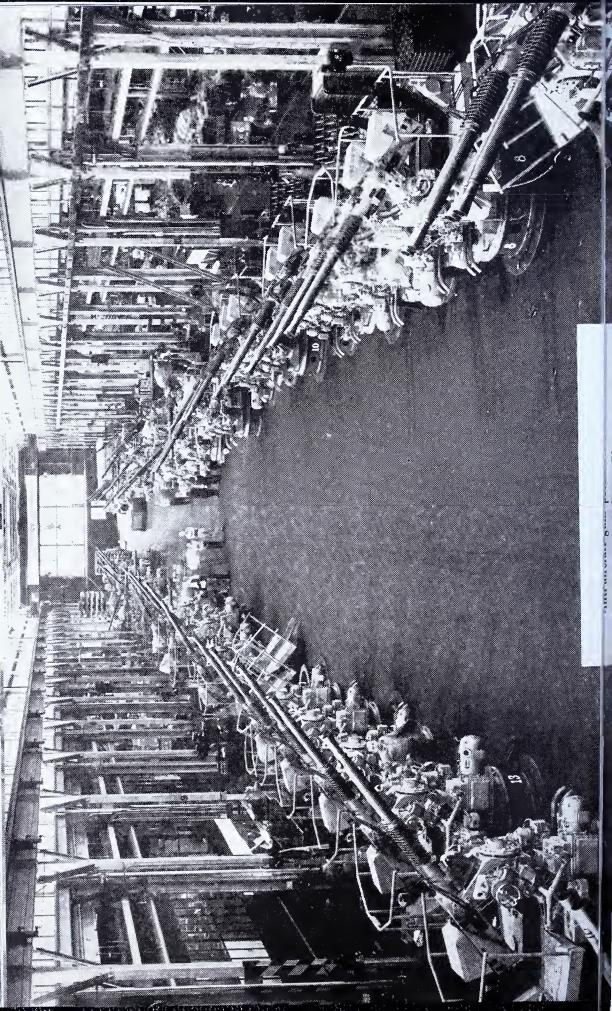
September of that year the gun was in production, although the difficulty another company had in manufacturing the projectile kept it from action.

A second Pennsylvania exclusive was the 75-millimeter recoilless rifle. Intended to combine the mobility of the bazooka with the hitting power of the regulation 75, it was developed at Frankford Arsenal and produced by the Miller Printing Machinery Company of Pittsburgh. It saw service in the final stages of the European war and on Okinawa.

The most effective of the three was the wakeless torpedo. Since the conventional torpedo, powered by compressed air, betrayed its course by a tell-tale streak of air bubbles, the Navy looked for a weapon which would be less easy to dodge. Less than four months after Pearl Harbor, a contract for the development of such a torpedo was let to Westinghouse. In a closely-guarded section of the Sharon plant work began on designing an electric motor to power the weapon. Test models were hauled north to Lake Pymatuming for secret trials. Just 109 days after work was started, the first five were completed. As sub-skippers learned the effectiveness of this new weapon, they demanded full loads of the electric model, causing production schedules to be revised upward. By V-J Day the Sharon plant had turned out 10,000 wakeless torpedoes and had

A projectile being loaded into the 36-inch mortar, designed and built by the Mesta Machine Company, Pittsburgh.





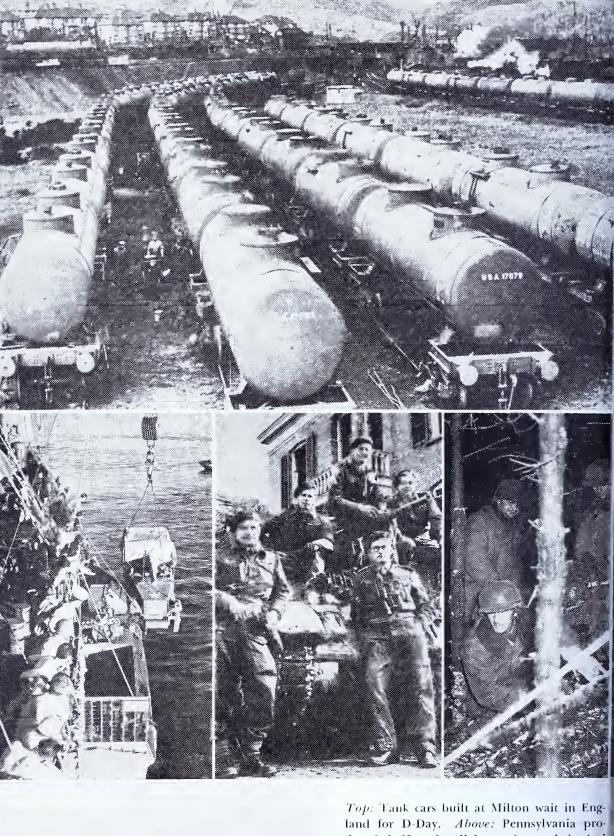
1,858,200 tons of Jap shipping to its credit.

While Pennsylvania could not hope to equal automotive Michigan in the production of vehicles, it had some outstanding accomplishments to its credit in this field. The omnipresent jeep was developed by the American Bantam Car Company at Butler, although built by another company. Mack Truck at Allentown and Autocar at Ardmore contributed a variety of heavy trucks and half-tracks. The light tanks built at the American Car and Foundry plant at Berwick played an important role in blocking Rommel's drive into Egypt. The first Eighth Army vehicles to enter Tripoli were four Berwick tanks. Baldwin Locomotive Works constructed medium tanks and the only heavy tank the United States built. In the later years of the war both ACF and Baldwin returned to building cars and locomotives for the Army. H. K. Porter Company, Pittsburgh, also turned out locomotives for the Army and Navy, including its famous fireless type.

Arms and armor were produced in almost every section of the State. The Bethlehem naval armor plant of the Bethlehem Steel Company turned out 127,000 tons of armor plate, enough to protect 15 battleships or 91 light cruisers. The Standard Steel Spring Company of Pittsburgh formed a pool

The 75-mm. recoilless rifle, designed at Frankford Arsenal and built by the Miller Printing Machinery Company, Pittsburgh.







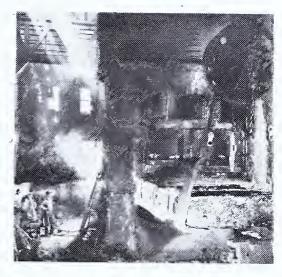
land for D-Day. Above: Pennsylvania produced half-tracks, light tanks, and barbed wire. Left: The Piper Cub, the Army's "grasshopper" plane, built at Lock Haven.

which supplied half of the armor for the nation's tanks. In York, home of the original ordnance pool, two neighboring plants combined their resources to manufacture 8-inch guns.

Two U. S. Steel plants did important pioneering work in the ordnance field. The Christy Park Works of the National Tube Company, U. S. Steel subsidiary, at McKeesport, was the original pilot plant for Army bombs and produced more 15,000,000 shells. The Imperial Works of another subsidiary, the Oil Well Supply Company, at Oil City. was the first commercial producer of 8-inch high-explosive shells and was the pilot plant for the breech and firing mechanism of the 155-millimeter gun.

In the production of aircraft Pennsylvania ranked far down the list in fifteenth place with orders of \$967,-120,000. It had only two plants working on combat planes, and neither was able to get into full operation. Some of the State's contributions, however, were unique, especially the Piper Cub. The Lock Haven plant turned out 7,000 of these for the armed forces during the war. The Army's "flying jeeps," which could be flown almost anywhere by anyone, were virtually all Piper products. The Kellett Aircraft Corporation of Upper Darby did some important experimental work in developing a helicopter for the Army, while a nearby firm, the P-V Engineering Forum of Sharon Hill, produced a different type for the Navy.

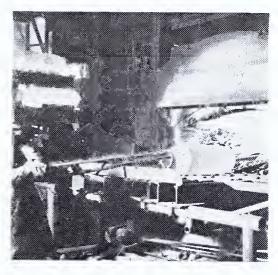
Although relatively few planes rolled out of Pennsylvania factories, many of those assembled in other states contained parts produced here.



Armor plate being forged in 14,000-ton hydraulic press at Bethlehem.

Aircraft motors were built by the Aviation Corporation of America at Williamsport and the Jacobs Aircraft Engine Plant in Pottstown. Propellers came from the new Curtiss-Wright plant at Beaver. In Philadelphia Bendix Aviation turned out the Gyro Flux Gate Compass, nicknamed the "invisible crew." The Libby-Owens-Ford Glass Company plant at Brackenridge developed a rear-vision mirror for fighter planes. Plexiglass

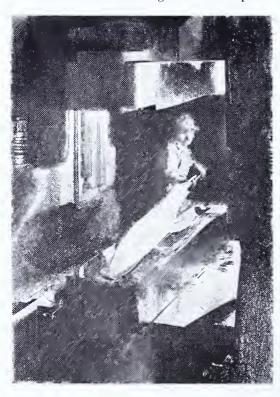
Bomb casings being removed from a furnace at the Christy Park Works of the National Tube Company.





An automatic attachment cuts a steel die from a plastic mold. Dies like these make precision forgings.

Hammer forging an aluminum propeller blade at the Canonsburg aluminum plant.



gun turrets and bomber noses were made possible by experimental work at the Rohm and Haas factory at Bristol, where much of this plastic was manufactured.

Some of the huge gliders which took part in the airborne invasion on D-Day were assembled by the G. & A. Aircraft Company at Hatboro from parts built by other Pennsylvania firms, including H. J. Heinz of Pittsburgh, which added this new line to its famous 57 varieties. The new Scranton plant of the Murray Corporation produced wings for the Super-Forts. Some aircraft parts had to be made from a special copper alloy produced by the Beryllium Corporation, near Reading, the only plant of its kind in the world. All but two of the 33 strato-chambers in the United States used to test the reaction of planes and pilots to high altitudes, were built by York Corporation. One of these, designed to simulate a rate of climb of 1,000 feet a minute, could in 45 minutes reduce air pressure from 14.7 pounds per square inch to 2 and the temperature from 70 above to 67 below zero.

Another important category of war production was communications equipment, in which Pennsylvania ranked sixth with total orders of \$566,371,000. These goods, which included not only radios and telephones but the magic radar and other secret devices, were produced by the many well-established electronic plants in the State as well as by several new comers. A former radio operator, James Bagwell, for example, set up shop in the corner of a Lancaster garage and produced half a millior crystals for Air Force radios. At Car

lisle a mechanic named P. R. Hoffman formed a partnership with his brother-in-law to establish one of the most successful crystal plants in the country, developing a remarkable device which greatly increased the production of crystals. Another small firm with a unique record was the Batteryless Telephone Equipment Company, which specialized in a sound-powered telephone for Navy divers, invented by the company's founder, F. G. Troisi.

the development of radar, Philco Radio Corporation played an important role. Four days after Pearl Harbor the company was asked to deliver two sample IFF (Identification, Friend or Foe) radar sets in thirty days. Working at top speed, engineers had almost 26 completed by New Year's Eve. Anxious to deliver them the next day, they set up a laboratory in a baggage car and finished the sets on the way to Wright Field, where they arrived January 1. The same company was also responsible for the development of "Micky," the radar bomb-sight which pierced the clouds, and devised the first moving assembly lines ever used for radar to get it into production.

One of the most important secret weapons of the war was the VT-fuse, a miniature radio transmitting set placed in the nose of a shell, which exploded the projectile when it came within 75 feet of the objective. The VT-fuse was responsible for the deadly accuracy of our anti-aircraft against German buzz-bombs and Jap Kamikaze planes. Most of the tiny tubes used in this device were produced by Sylvania Electric Products, which turned them out at its plants at



Pennsylvania plants provided the rayon for parachutes to drop supplies to our troops in the field.

Bomb turrets were made of Plexiglass, a new plastic developed and produced by a Pennsylvania firm.



Johnstown, Altoona, Mill Hail, Montoursville, and Williamsport. Westinghouse also manufactured these tubes at Sunbury.

The wide variety of Pennsylvania industry was indicated by the State's rank of second in unclassified war production. Nearly 40 per cent of its total war orders, or \$4,909,771,000, was in this category. One example was the "bean soup" produced by the National Foam System at West Chester, used by the Navy to extinguish dangerous fires aboard ship. York County manufactured 70 per cent of the nation's wire cloth, essential for screening out mosquitoes on the malaria-infested isles of the Pacific. As early as 1937 Hershey Chocolate developed the famous Ration D bar,

The blind and other handicapped persons provided a valuable addition to the wartime labor force, often outdoing the able-bodied.



which kept many a soldier from starvation.

These were only a few random samples, perhaps not even the most outstanding ones, of the record of Pennsylvania's 8000 war plants. Taken as a whole, the picture was impressive. Total production had multiplied more than two and a half times in five years, from \$5,705,465,000 in 1939 to \$15,054,946,000 in 1944. Part of this increase was due to the fact that the Federal Government had spent \$1,270,417,000 in Pennsylvania, more than in any other state, to expand industrial facilities.

New plants alone could not make this expansion possible. Workers had to be found to keep the machines in operation. The number of persons employed in Pennsylvania industries rose from an estimated 2,291,052 in December, 1939, to 2,560,181 in December, 1943, when employment reached it wartime peak. Since in the meantime about 800,000 Pennsylvanians had joined the armed forces, this meant that over a million persons were working at the end of 1943 who had not been employed four years earlier. These industrial recruits had come first from the unemployed, but that group was virtually eliminated by the close of 1943. There were then only 30,000 persons in the entire State dependent on general assistance, and most of these were unable to work because of some disability.

The rest of the army of new workers came largely from two classes: housewives, who in normal times would have preferred to remain in

Opposite page: Women replaced men or many jobs, even in heavy industry.



their kitchens, and persons who had previously been denied work because of employer prejudice against their race or their physical handicaps. Women took over all kinds of war work, invading such hitherto exclusively masculine industries as railroads and steel mills. One of every four war workers was feminine, while women held nearly half of the nonwar jobs. At some tasks physically handicapped workers did better than their able-bodied neighbors.

Many jobs required special training. To aid industry in developing new skills needed, the State Department of Public Instruction set up a War Production Training program for the Federal Government in 167 school districts. During the five years this program was in existence, it provided training for 335,793 persons who were then unemployed. Instruction permitting workers to move up to better jobs was given to 414,359 others who were already at work. Of this total of 750,152, 121,041 were women; 55,030, Negroes; and 859 veterans of World War II. Pennsylvania colleges also operated an Engineering, Science, and Management War Training program, which prepared over 200,000 persons for skilled positions.

Pennsylvania had as important a role in the transportation of war goods as it had in their production. Although its 12,000 miles of railroad track give it only third rank among the states, Pennsylvania consistently loads more tonnage into freight cars than any other state. The tonnage originated in Pennsylvania grew 35 per cent during the war while tonnage unloaded rose 42 per cent.

Seventy-three railroads operated within the State, fifty of them entirely inside its boundaries. Six of these had more than 500 miles of track in Pennsylvania, including the Pennsylvania, the Reading, the Baltimore and Ohio, the New York Central, the Erie, and the Lehigh Valley. Ten per cent of all the nation's railroad employees worked in Pennsylvania, and more than 20 per cent of supplies came from railroad State. The Pennsylvania, which still has almost 4,000 of its 10,000 miles of track inside its mother state, became the first railroad in the world to take in a billion dollars a year.

Other forms of transportation also played their part. Pennsylvania's expanding trucking industry used its mobility to meet the need for emergency shipments. Philadelphia shipped more Lend-Lease material to Russia than did any other port.

Other utilities likewise filled an essential role. Radio stations gave generously of their time for all the war effort campaigns and conducted special drives of their own. Newspapers similarly contributed free advertising space. They sold millions of dollars' worth of war bonds and stamps through their carriers and carried on a successful scrap drive. Individual newspapers also conducted campaigns for many worthwhile purposes.

Every type of business, in fact, made its contribution, direct or indirect, to victory. Labor and management cooperated to push production to unheard of heights. The war could scarcely have been won without this remarkable achievement. Pennsylvania could well be proud of the combat record of its industrial army.



Pennsylvania's 173,267 farms produced at the rate of half a billion dollars a year.

V.

FOOD FOR FREEDOM

In the war against oppression the miner's pick and the millman's drill were no more potent weapons than the farmer's plow. Although often overshadowed by Pennsylvania's towering industrial might, agriculture in the State represents an invested capital of over a billion and a half, comparing favorably with any of the Commonwealth's manufacturing industries. Pennsylvania's varied agriculture produces nearly every kind of crop which can be grown in its climate, and in many of them ranks consistently among the first ten states.

Although fields could not be expanded as readily as factories during the war, Pennsylvania farmers did manage to bring an extra acre into cultivation by 1945 for every twelve in 1940. Acreage in production rose from 6,097,116



Pennsylvania held first place in the production of cigar-leaf tobacco.

to 6,610,473 in that five-year period, while the number of farms in the State increased from 169,027 to 173,267.

This expanded acreage did not mean an increase in production in

Six million bushels of peaches came from Pennsylvania orchards during the war.



every case. Fertilizer and feed were scarce; machinery was irreplaceable; and help was hard to get in spite of wages which doubled in four years. Weather, too, turned from friend to foe after 1942. In the face of these handicaps Pennsylvania farmers were able to raise their average war-year production above the level of the peacetime '30's for only four of the nine principal field crops—corn, bar-ley, hay, and tobacco.

Nevertheless, they did enrich the United Nations breadbasket with a total four-year output of 69 million bushels of wheat, 89 million bushels of oats, twelve and a half million bushels of barley, three million of rye, and almost ten million of buckwheat. In production of the latter grain Pennsylvania regained in 1944 the first place it had lost to New York in 1942. Corn cribs bulged with a total of 116 million bushels for the four war years. More than thirteen million tons of hay were harvested in the same period.

The cigar shortage was relieved in part by production of cigar-leaf tobacco at the rate of 48 million pounds a year, more than 25 per cent above the average of the '30's. Pennsylvania continued its customary hold on first place in this classification by virtue of the industry of Lancaster County farmers. The tobacco raising skill of the Lancaster County men was used to raise belladonna in 1942 to meet the Army's emergency needs for the drug. They were so successful in cultivating this new plant that in one year the Army had more than it could use.

Potatoes were dug out of Pennsylvania fields at the rate of 18 million bushels a year. Although this was 25

per cent below the pre-war average, it was enough to give the State sixth place in the nation. Orchards helped to balance the wartime menu with apples, peaches, pears, grapes, and cherries. In all these categories Pennsylvania consistently ranks among the first ten states. Even though the heavy spring frosts of 1945 nearly destroyed fruit crops for that year and brought the averages for all fruits well below pre-war levels, Pennsylvania's production from 1942 to 1945 totaled 28 million bushels of apples, six million bushels of peaches, a million and a quarter bushels of pears, 62 million tons of grapes, and 28 million tons of cherries, a record exceeded by few other states.

More than a million hogs a year were farrowed on Pennsylvania farms.





Women and children worked in the fields to help meet the farm labor shortage.

The need for balanced diets for both war workers and fighting men emphasized the growing importance of truck farming in the State's agricultural economy. The volume of vegetables raised for processing increased enormously. Snap beans averaged 8,675 tons a year from 1942 to 1945, as compared with 3,100 tons from 1930 to 1939; sweet corn was up to 27,625 tons from 12,900 in the same periods; peas jumped to 16,180 tons, as compared with 3,570; and toniatoes rose to 166,950 tons from The 1943 tomato crop for 55,700. processing was the equivalent of 38 one-pound cans for each person in

the State. The ration-stimulated demand for fresh vegetables was met by increased production for that market, and eight of the twelve principal crops showed increases over prewar years. The estimated value of all major truck crops rose sharply from less than nine million dollars in 1941 to more than nineteen million in 1945.

Even more important than fruits, vegetables, and cereals in Pennsylvania's agriculture were meat, milk, and eggs. While these products often seemed scarce during the war, actually more of each was being produced than ever before. The number of

hogs raised on farms averaged better than a million a year, up by onefourth from 1941. The beef supply also increased as the number of cattle on farms reached a 25-year peak of 1,623,000 on January 1, 1945. On the other hand, the few Pennsylvania sheep grew even fewer, declining to 284,000 at the close of 1945.

While the sale of poultry provided less of the farm income than the sale of hogs and cattle, it was of greater national significance. Pennsylvania rose from 14th in 1941 to 8th in 1945 in the number of turkeys raised and from 7th to 6th in chickens in the same years. Spurred on by the demand for non-rationed meat, State's farmers raised almost 41 million chickens in 1943, as compared with less than 30 million two years earlier. Pennsylvania's 636 hatcheries, more than there are in any other state, saw over 84 million baby chicks break out of their shells in 1945, their peak year. Average annual production of 71 million chicks during the war gave the State 6th place in this category. The number of turkeys raised shot up from 927,000 in 1941 to 1,670,000 in 1945, making a total of 5 million turkeys in four years. The number of chickens raised in the same period was over 144 million.

Some of these went to build up egg-laying flocks. The number of chickens on farms rose 5 million in four years to 25 and a half million at the close of 1945. Egg production jumped even more rapidly from 172 million dozen in 1940 to a peak of 232 million in 1944. In four years of war 850 million dozen eggs were laid in the State, or enough for five

eggs a week for each of Pennsylvania's ten million persons.

The output of dairy products, which furnish the Pennsylvania farmer more cash than any of his other activities, could not be stepped up so rapidly, since dairy herds must be developed slowly. Nevertheless, the number of milk cows in the State rose 5 per cent from the end of 1941 to the end of 1945. There were then 942,000 milk cows in Pennsylvania, 10,000 less than a year earlier. value of these dairy herds was up over 50 per cent in the same four years, to more than 139 million dollars.

Annual milk production climbed from 546 million gallons in 1941 to a new high of 610 million in 1945. The war-year average was the equivalent of 234 quarts for each of ten million Pennsylvanians, or better than four quarts a week. While not all of this was put in bottles to be left on doorsteps, more of it was than ever before. So much did the demand for fluid milk increase that the amount available for other dairy products actually declined. of butter from both farm and creamery in Pennsylvania fell off each year. Ice cream dropped from its peak production of 54 million gallons in 1942 to 48 million in 1943 and 1944, but jumped up again immediately following the end of the war.

In spite of these declines, Pennsylvania maintained its first place among the states in the manufacture of ice cream. It was also first in the value of milk sold direct to consumers by dairy farmers, third in production of Philadelphia cream cheese, and

fifth in the value of sales of all dairy products.

Rising prices and production made Pennsylvania agriculture a half billion dollar a year industry. Gross cash income increased each year, from 280 million dollars in 1940 to 398 million in 1942 to 576 million in 1945. Of the 1945 income, over 404 million came from livestock and livestock products, more than double the 1940 return. Sale of crops in 1945 brought in over 140 million dollars, up 75 per cent in five years. The rest of the 1945 income was a government subsidy of 31 million dollars.

The farmer's net cash return, of course, did not rise correspondingly, since all his operating costs had likewise increased. Nevertheless, the figures were a measure of the value of his contribution to the war. Like the men in the mines and the factories, Pennsylvania farmers had given their full support to their million and a quarter fellow-citizens who served in uniform. Pennsylvania's contributions had been so great that everyone of its citizens could well be proud of Though the Commonwealth had not won the war alone, it had in truth been the Keystone of Victory.

The State's dairy herds produced 610 million gallons of milk in 1945, more than ever before.



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